COIN DISCRIMINATION APPARATUS AND METHOD

ABSTRACT

A coin discrimination apparatus and method is provided. Coins, preferably after cleaning, e.g. using a trommel, are singulated by a coin pickup assembly configured to reduce jamming. A coin rail assists in providing separation between coins as they travel past a sensor. The sensor provides an oscillating electromagnetic field generated on a single sensing core. The oscillating electromagnetic field is composed of one or more frequency components. The electromagnetic field interacts with a coin, and these interactions are monitored and used to classify the coin according to its physical properties. All frequency components of the magnetic field are phase-locked to a common reference frequency. The phase relationships between the various frequencies are fixed, and the interaction of each frequency component with the coin can be accurately determined without the need for complicated electrical filters. In one embodiment, a sensor having a core, preferably ferrite, which is curved, such as in a U-shape or in the shape of a section of a torus, and defining a gap, is provided with a wire winding for excitation and/or detection. The sensor can be used for simultaneously obtaining data relating to two or more parameters of a coin or other object, such as size and conductivity of the object. Two or more frequencies can be used to sense core and/or cladding properties. Objects recognized as acceptable coins, using the sensor data, are diverted by a controllable deflecting door, to tubes for delivery to acceptable coin bins.

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